DEVELOPMENTS IN THE URANIUM RESOURCE ASSESSMENT PROGRAM

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This Seminar comes at a time of transition in our uranium resource program. At this meeting, we will be hearing of the results of several years of diligent and intensive effort by many people. We have just released "An Assessment Report on Uranium in the U.S.A." This report is a major milestone in our activity and constitutes a significant reappraisal of U.S. uranium resources. We will also be hearing of new directions and plans for the program in response to changing conditions and needs.

The task of assessing potential resources is a difficult one. In our study an enormous amount of original information has been developed, ranging from the reconnaissance type data of the airborne radiometric and magnetic surveys, and the hydrogeochemical surveys, to detailed geologic studies and drilling of selected field sites. The collection and analysis of these data to produce new and more reliable resource estimates has been done rapidly and well. With the completion of airborne surveys now under contract, we will have accomplished over 1,179,000 line miles of flying, covering virtually the entire conterminous U.S. and 76 percent of Alaska. The geochemical sampling covered some 67 percent of the conterminous U.S., and 82 percent of Alaska. The data developed should serve the country well for many years, providing a sound factual basis for future exploration and evaluation of uranium as well as other mineral resources. The data are having increased use for other purposes, especially in the environmental field. In this fiscal year we will be working hard to clear up the data backlog and to make this data readily available. Much remains to be done, especially in the geochemistry program, where a backlog of samples remains to be analyzed.

An important accomplishment during the last few years has been the development of a more systematic and complete approach to uranium ore deposit classification and description, particularly in clarification of the characteristics of geologic areas favorable for the occurrence of uranium deposits. Bendix Field Engineering Corporation staff deserve particular commendation for their accomplishments in this area.

Transforming the data base and the concepts on uranium deposits and environments into evaluations of areas in the field was the task of the Quadrangle Evaluators. Major roles in this activity were carried out by Bendix, and the U.S. Geological Survey, as well as by the DOE staff. Quadrangle evaluation involved the compilation and analysis of all of the available data on the assigned National Topographic Map System quadrangles, the gathering of additional needed field data, and detailed study of the specific geologic environments considered favorable for uranium. These studies, which will be published in Folio form, constitute the information base underlying the quantitative resource assessments.

With the knowledge developed by the evaluators, input from other experts on the areas involved, and employing a newly developed methodology, new resource estimates were made in terms of probability distributions. We believe these are the best resource estimates that have been made to date.

The reassessment included reappraisal of some 646 specific geologic areas. These areas include all areas with reserves of uranium producible at costs of $50 per pound or less. Some 135 quadrangles, of the 621 comprising the U.S., have been evaluated in detail. Some 27 additional quadrangles are still in the evaluation process and will be completed during fiscal year 1981.

In 1981 and beyond, there will be some basic changes in the Uranium Resource Assessment program. As you are well aware, there is much less concern at present about the adequacy of near-term uranium supply than there was a few years ago. There is a more general acceptance of the view that U.S. resources are substantial and industry can produce them in a timely manner. This does not mean that there are no concerns about uranium supply. Clearly the industry faces a number of problems. However, these problems are only partially related to our concepts of the magnitude of the resource base. Over the long-term, there is also a more relaxed outlook, especially if one accepts the prospect of use of higher cost resources. In any case, we no longer perceive the general sense of urgency regarding uranium supply which was the impetus for our comprehensive and systematic strategy for appraisal of U.S. resources.

Consequently, we will modify our program to provide a more selective approach to the areas studied. The quadrangle evaluation approach to resource assessment will be abandoned in favor of a geologically based, site specific approach. While the program plans have been changed, the data base, deposit concepts, and methodology that have been developed will serve us well in the revised program. The enormous data base will take several years to digest and will provide a strong underpinning to future work.

To develop our modified potential resource program, we will build on the "World Class" concept which has an element of the past program. This activity seeks to identify and evaluate sites in the U.S. similar to major foreign uranium deposits. While we have done preliminary studies on a number of types of deposits, our principal effort has been on the Precambrian conglomerates. Related to this effort is the study of "Intermediate Grade" deposits, generally of 0.01 to 0.05 percent U_3O_8, which have not been of interest to industry, but which would be of significance for long-range nuclear energy planning. To round out our program, "Conventional" deposit sites will also be investigated so we can also include the major types of deposits known to occur in the U.S.

For each of these resource investigation categories, preliminary favorability studies will be conducted to select promising sites for detailed study. When results at a site are promising, the studies will be expanded to encompass the larger geologic area involved, leading to a comprehensive assessment of that geologic environment. As in the past program, detailed results will be published for the benefit of industry exploration planning.

A supporting activity to improve technology for resource identification and evaluation will continue. The program has been successful in improving various aspects of the state-of-the-art of data capture and analysis. Efforts will also continue to improve interpretation and evaluation of basic geophysical and geochemical data that had been developed in the NURE program.

We will, of course, continue what we consider as a basic core program, estimating ore reserves, based on industry provided drill hole data. Closely related to that activity is the analysis of the ore reserve and potential resource data to develop projections of production capability and economics to better measure the future supply outlook. As a more in-depth look at future production capability and economics will be critical to understanding the domestic production possibilities - and problems - we expect to carry out a more varied and comprehensive study in this area. Uranium market and demand developments will also continue to be studied and reported.

Related to investigations of future domestic supply and the state of the domestic industry, we will continue to monitor foreign supply developments and the role of foreign uranium in the U.S. marketplace. Softening of prices and reduced perceptions of demand have raised concerns about the potential impacts that increased use of foreign uranium could have on the domestic industry.

We will continue to take an active role in international activities, including the International Uranium Resource Evaluation Project, which seeks to improve estimates of world uranium resources by sponsoring teams of experts to study selected countries considered to be favorable for uranium occurrence. We are also involved in several cooperative research activities on exploration techniques. Both of these activities are sponsored by the OECD-Nuclear Energy Agency and the International Atomic Energy Agency.

The Uranium Resource Assessment program will continue to provide vitally needed information for government and industry planning. The overall effort will be somewhat reduced from past years. Nonetheless, it will still be a significant effort that will carry us toward an improved understanding of the nature of uranium resources and the outlook for future uranium supply and economics. We look forward to working with all of you in the conduct of this program.